	Incidence	Odds ratio	95% CI	p
ARF	6.9%	6.3	3.0–13.3	<0.001
Minor CK-MB rise	26%	2.5	1.2–5.5	<0.05
Majo. CK-MB rise	13%	3.7	1.5–9.2	<0.01

'Minor' CPK-MB elevation was associated with a *threefold* increase in late mortality (compared with no CPK-MB rise). 70% of these deaths were cardiac; causes included arrhythmia in 42% complications of MI in 26%, and heart failure in 21%. *We conclude:* Following ablative NDA in native coronary arteries: (1) ARF and CPK-MB elevation are independent predictors of late mortality and (2) 'minor' CPK-MB elevations are associated with an excess of late cardiac deaths, particularly arrhythmia deaths. The implications of these findings warrant further investigation.

2:30

753-3 Impact of Right Coronary Artery Disease on Complications During Treatment of the Left Coronary System With the Rotablator

Mark Reisman, Verna Harms. *Swedish Medical Center, Seattle WA*

High speed rotational ablation can transiently affect left ventricular function in the myocardium subtended by the treated vessel. The remaining vessels under these circumstances may play a greater role in hemodynamic support. To assess the complications of multivessel disease, we analyzed the multicenter registry (n = 3284 pts). We compared pts receiving treatment of the either the LAD or circumflex with a significant stenosis in the RCA (> 70%) (Group A, n = 331 pts.) with the remaining subset of patients (Group B, n = 2953 pts). The following rates of complications were observed:

	No reflow	Q MI	NonQMI	CABG	Death
Gr. A	0%	1.2%	7.6%	4.2%	3.4%
Gr. B	0.5%	1.2%	5.4%	2.5%	1%
p	0.38	0.79	0.14	0.10	<0.002

While the rates of non Qwave MI and CABG tended to be higher in Group A the differences were not significant. Only the mortality was significantly higher in Group A. Of the 331 patients in Group A, 168 had lesions in the RCA of 70–99.9% while 163 had 100% occlusions. Eleven deaths occurred in this group; 8 in the subgroup with 100% occlusion and 3 in the subgroup with 70–99% lesions of the RCA, p = 0.06. *Conclusion:* Patients with significant right coronary disease appear to be at increased mortality during Rotablator treatment of the left coronary system.

2:45

753-4 Mechanisms of Bradyarrhythmias Associated With Rotational Atherectomy

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Rotational atherectomy (RA) frequently produces transient bradyarrhythmias (BA) necessitating temporary pacemaker placement. Etiologies of these arrhythmias may include vagal responses or localized adenosine release. We studied heart rate responses during RA in 100 consecutive pts in sinus rhythm randomized to one of four groups to receive atropine (AT = 2 mg IV), or aminophylline (AM = 5 mg/kg IV) prior to RA: Group A = double placebo (pl); Group B = AT+ pl: Group C = pl + AM; Group D = AT + AM. Temporary pacemakers (PM) were placed in all pts prior to RA, with demand pacing at 40 bpm. Endpoints included BA requiring PM, AV block (AVB), heart rate < 50 bpm at the end of burr runs, and use of dopamine (DP) for hemodynamic support. Results: 94 pts randomized had RA performed. Clinical features and vessels treated were similar between groups. Discrete variables were examined with χ^2 tests; *p ≤ 0.05 vs Group A.

Group	N	PM (%)	AVB (%)	HR < 50 (%)	DP (%)
A	25	40	16	56	24
B	24	33	21	17	4*
C	22	36	14	41	27
D	23	4*	9	9*	4*

*p ≤ 0.05 vs Group A.

Thus, AM and AT alone partially ameliorated the BA during RA, while the combination almost completely abolished them.

Conclusions: Significant BA are common with RA and may require pacing or pressor support. Both vagal stimulation and adenosine release are important mediators of the bradyarrhythmias during RA.

3:00

753-5 Clinical and Angiographic Predictors of Adverse Cardiac Events After Rotablator Atherectomy

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Rotablator (MRA) was performed in 337 consecutive lesions (309 patients) from August 1993 to September 1994 (age 65 ± 12 years and 64% male). Pre-intervention ACC/AHA classification was A (5%), B1 (22%), B2 (32%), B3 (23%), B4 (8%), B5 (1%), and C (9%). 73% of patients had multivessel disease and 76% had a myocardial infarction within 3 months. Angiographic predictors of major in-hospital cardiac events (7%) including repeat PTCA, MI, CABG, and death were final lumen diameter and residual stenosis after adjunctive PTCA (p < 0.05). Adverse events (AE) at 6 and 17 months included repeat percutaneous intervention (21, 30%), CABG (8, 10%), target vessel revascularization (TVR) (18, 26%), death (5, 12%), and any AE (24, 38%). Event-free survival was 76% at 6 months and 62% at 17 months. Univarate predictors of TVR and AE were:

	TVR	AE
Younger age	p < 0.04	p = NS
Diabetes	p = NS	p < 0.03
Hypertension	p < 0.05	p < 0.05
Bifurcation Lesion	p < 0.03	p = NS
Restenosis lesion	p = NS	p < 0.007
Smaller reference artery size	p < 0.05	p < 0.001

Other variables not predictive of TVR or AE included gender, cholesterol, smoking, anginal class, recent MI, number of vessels diseased, calcification, dissection grade, lesion length and luminal results.

Conclusions: Younger patients with diabetes, hypertension, a bifurcation lesion, a restenosis lesion, and small reference artery size were more likely to have adverse events after MRA. A smaller final minimal lumen diameter and increased final stenosis were associated with increased in-hospital events, but did not predict adverse events during follow up.

3:15

753-6 Complications With New Angioplasty Devices. Are These Device Specific?

Sameer Mehta, Jeffrey Popma, James R. Margolis, Linda Moore, Oscar R. Pena. *Miami Heart Institute, Miami Beach, FL*

Thrombus, dissection, spasm, perforation, distal embolization, and abrupt closure are complications associated with the use of New Angioplasty Devices (NAD). To determine if these adverse outcomes are NAD specific, data from 2233 native coronary lesions treated with NAD in the NACI Registry Angiographic Core Laboratory were examined. NAD included in the analysis were Directional Atherectomy (DVI), Extraction Atherectomy (TEC), Rotablator (ROTA), Palmatz Schatz Stent (PSS) and Excimer Lasers (AIS, SPEC).

	DVI	TEC	ROTA	PSS	AIS	SPEC
Thrombus	1.7	2.1	3.7	0	5.1	3.2
Spasm	0.8	0	4.8	1.2	2.8	1.1
Embolism	1.9	0	2.8	0	1.4	0
Abr. Closure	1.3	8.3	3.7	0	7.4	1.1
Dissection	9.4	25.0	147	6.5	31.7	33.0
Perforation	< 1	4.2	< 1	0	3.2	3.2

Conclusions: (1) Excimer Lasers (AIS, SPEC) are associated with increased rates of dissection and thrombus (AIS), Rotablator with increased spasm and embolism and TEC Atherectomy with more frequent abrupt closure and perforation rates. (2) Anticipation of these device specific adverse outcomes may be helpful in their management.